REMARKS

Claims 1-10 and 12-17 are pending in the application and are at issue.

Claim 6 has been amended to improve the form of the claim and provide a proper antecedent basis for the presence of optional ingredient (f) of claim 1.

This amendment is submitted in accordance with 37 C.F.R. §1.116(a) and §1.116(b) in order to present the rejected claims in a better form for allowance or appeal. The amendment is necessary to eliminate rejections under 35 U.S.C. §112, first paragraph, and 35 U.S.C. §103. This amendment was not presented earlier because the rejection under 35 U.S.C. §112, first paragraph, is a new ground of rejection. In addition, applicants believed, and still believe, that all outstanding issues were addressed, and overcome, in Amendment "A," filed August 10, 2007. This amendment should be entered because it places the application in better form for allowance or appeal, and the amendment does not require further searching or present any new issues.

The present invention is directed to foams prepared from an already formed basic polymer. The polymer foams are prepared by crosslinking an already formed basic polymer in an aqueous solution. The foam structure is fixed by crosslinking the basic polymer. The basic polymer foams of the present invention optionally can contain water-absorbing acidic polymer particles. The optional water-absorbing acidic SAP particles are fixed, as particles, in the basic polymer foam.

These features of the present invention are clearly set forth in independent claims 1 and 8, wherein a basic polymer (free of acid monomers), a crosslinker, and a surfactant (plus one or more optional ingredients (d), (e), and (f)) are formed into an aqueous mixture, the aqueous mixture is foamed, then the foamed mixture is crosslinked. Note that the aqueous mixture can further contain water-absorbing acidic particles (f). The claimed foam is *not* prepared by polymerizing an acidic or a basic monomer (or a mixture thereof), but by crosslinking a basic polymer that is in solution. If present, the acidic particles (f) are embedded in the foam as particles.

Claims 1-10 and 12-17 stand rejected under 35 U.S.C. §112, first paragraph, for failing to comply with the written description requirement. The examiner contends that the phrase "said basic polymer free of acidic monomers" was not described in the specification in such a way to reasonably convey to persons skilled in the art that the inventors had possession of the claimed invention at the time of filing the application. Applicants traverse this rejection.

The term "free of acid monomers" is explicitly taught in Examples 1-15 of the specification. In particular, the specification contains fifteen total examples at pages 30-43. *Each* of these examples utilizes a basic polymer, i.e., polyvinylamine, that is *free of acid monomers*, which shows that the inventors had possession of the presently claimed invention at the time of filing the application. The examiner is specifically directed to the "Basic Polymers" disclosed in the specification at page 3, line 32 through page 4, line 2, which lists basic polymers "free of acid monomers" and basic monomers that "can be polymerized alone".

Not only have applicants demonstrated that they possessed the claimed invention at the time of filing the application, thereby complying with the written description requirement, applicants also have enabled persons skilled in the art to make and use the invention. In particular, applicants provided fifteen examples of a foam prepared from a basic polymer that is free of acid monomers, *and* applicants specifically teach how to make foams from a basic polymer that is free of acid monomers. Therefore, applicants not only have provided numerous examples of the presently claimed invention, but also have specifically provided instructions to persons skilled in the art as to how to make foams from a basic polymer that is free of acid monomers.

The examiner may be concerned that the specification does not specifically state the term "free of acid monomers". However, it is settled law that a claim term does not have to be recited *in haec verba* in the specification. To comply with 35 U.S.C. §112, first paragraph , all that has to demonstrated is whether applicants' disclosure has conveyed sufficient information to those skilled in the art that the applicants have invented the claimed subject matter. Applicants have met this burden in Examples 1-15, and in the disclosure at page 3, line 32 through page 4, line 2, of the specification. As stated in MPEP §2163, "[I]t is now well accepted that a satisfactory description may be in the claims *or in any other portion*

of the originally filed specification" (emphasis added). Support for a claim limitation can be express, implicit, or inherent.

Applicants have provided sufficient information in the disclosure to inform those skilled in the art that applicants invented the claimed composition. Only acid monomer-free basic polymers are provided as examples. The MPEP goes on to state that the claimed invention can be described in words, structures, figures, diagrams, and formulas. Possession of the invention also may be shown by a reduction to practice, including testing of the claimed invention, which applicants have done in Examples 1-15.

A contention that because the term "free of acid monomers" is not recited in the disclosure, the specification therefore contains no basis for the term. This reasoning has been found clearly erroneous in *In re Wright*, 9 U.S.P.Q.2d 1649, 1651 (Fed. Cir. 1989), wherein the court stated:

> "...in *In re Smith*, 481 F.2d 910, 914, 178 U.S.P.Q. 620, 624 (CCPA 1973. As our predecessor court said in that case:
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> The specification as originally filed must convey clearly to those skilled in the art the information that the applicant has invented the specific subject matter later claimed. *In re Ruschig*, supra, 54 CCPA at 1559, 379 F.2d at 996, 154 USPQ at 123. When the original specification accomplishes that, regardless of how it accomplishes it, the essential goal of the description is realized.
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> In deciding the issue, the specification as a whole must be considered.
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> As also pointed out in Smith and as admitted by the board, "the claimed subject matter need not be described in haec verba in the specification in order for the specification to satisfy the description requirement." The fact, therefore, that the exact words here in question, "not permanently fixed", are not in the specification is not important. From the wording of the examiner's rejection it would seem that the did not know that; at least he wanted to be shown an "unequivocal teaching" that the microcapsules are not permanently fixed."...
>
> ...All of this convinces us that it is of the essence of the original disclosure that the microcapsules are "not permanently fixed" to their various supports. The examiner was therefore wrong in his underlying premise that the limitation added to the claim by amendment contained "new matter".

> The specification does unequivocally teach the absence of permanently fixed microcapsules. The §112 rejection was clearly erroneous and cannot stand. There is clear compliance with the description requirement."

Therefore, considering the present specification as a whole, particularly in light of the information disclosed in the examples, applicants have adequately informed those skilled in the art that the basic polymer is free of acid monomers. See MPEP, § 2163, II, A, 2, wherein the entire specification, including specific embodiments should be considered. Accordingly, it is submitted that the examiner's rejection is erroneous and the final rejection of claims 1-10 and 12-17 under 35 U.S.C. §112, first paragraph, should be withdrawn.

Claims 1-10 and 12-17 stand rejected under 35 U.S.C. §103 as being obvious over WO 99/44648 (WO '648) in view of WO 00/63295 (WO '295). The rejection is based on the contention that, because WO '648 discloses a superabsorbent foamed article that does not require a basic polymer and WO '295 discloses basic polymers in combination with acidic polymers, the combination of references renders the present claims obvious. The examiner's specific rationale supporting the rejection is that it is *prima facie* obvious to substitute equivalents. Applicants traverse this rejection.

The present claims recite a water-absorbing foam prepared by crosslinking an aqueous mixture containing at least one basic *polymer* and (optionally) a *particulate* water-absorbing acidic polymer, in addition to a crosslinker, surfactant, and other optional ingredients. An important feature of the invention is that the foam is prepared from a basic *polymer*, not monomers, and an optional acidic *polymer*. As explained above, the basic polymer, e.g., polyvinylamine in Examples 1-15, is free of acid monomers. It is important to note that the foam is prepared by crosslinking an already formed basic polymer, and that optional particles of an acidic polymer are dispersed throughout the foam of crosslinked basic polymer.

WO '648 and WO '295 are in the German language. The corresponding English language patent documents are U.S. Patent No. 6,455,600 ('600) and Canadian Patent No. 2,370,380 (CA '380), respectively, which will be referred to herein for convenience.

The '600 patent discloses a foam prepared from monoethylenically unsaturated *monomers* which contain acidic groups and other optional monoethylenically unsaturated *monomers*, by foaming the *monomers*, then *polymerizing* the foamed mixture. Accordingly, the cited reference is directed to *foamed* acidic polymers that optionally are copolymerized with optional monomers (b) disclosed at column 5, lines 11-57 of the '600 patent. An essential feature of the foams of the '600 patent is the presence of acidic monomers, e.g., see column 3, lines 19-45, disclosing foaming an aqueous mixture comprising monoethylenically unsaturated *monomers* containing *acidic groups* and *polymerizing* the mixture.

The presently claimed foams are substantially different from, and prepared in a substantially different way from, the foams disclosed in the '600 patent. First, a presently claimed foam is based on a basic polymer, *free* of acid groups, and is not an acidic polymer as disclosed and *required* in the '600 patent. Second, in the present claims, a basic *polymer* is foamed, i.e., is polymerized prior to foaming.

Third, the basic polymer is free of acid monomers, thus the basic polymer is not prepared in the presence of an acid polymers. The '600 patent discloses that acidic and basic monomers can be *co*polymerized. However, the '600 patent fails to disclose a polymer containing *only* basic monomers or a foam prepared from a basic polymer free of acidic monomers. Fourth, the present claims recite the optional presence of *particles* of an acidic *polymer*, i.e., an acidic polymer that is formed prior to preparation of the foam and is added, as particles, to the aqueous mixture of the basic polymer prior to forming a foam from the aqueous mixture by *crosslinking* the basic polymers. The particles of acidic polymer therefore are *fixed* in foam matrix

Based on these substantial differences, it is submitted that the '600 patent would not have rendered the present claims obvious. A person skilled in the art would have had to make numerous jumps in reasoning to arrive at the presently claimed invention after reading the '600 patent. First, a person skilled in the art would have to decide to prepare a foam based on a basic polymer free of acid groups, even though the '600 patent teaches a foam based on an *essential* acidic polymer containing an optional basic comonomer. The '600 patent provides no reason, but teaches away from, eliminating an acidic monomer or polymer component from the foam. Second, a person skilled in the art would have to decide

to prepare a foam from already formed polymers, then crosslinking the basic polymer to set the foam. In contrast, the '600 patent is limited to teaching a foam prepared from monomers that are polymerized and simultaneously crosslinked during the foaming process.

It also should be noted that crosslinking in the '600 patent is substantially different from the presently claimed crosslinking. The cited reference teaches crosslinking of the polymer backbone through the carbon-carbon double bonds of the monomers via a free radical mechanism. In the present foam, basic polymers are crosslinked *via* pendant hydrogen atoms or amino groups, not *via* the polymer backbone. The crosslinkers used in the present invention are different from those in the '600 patent.

In addition, the '600 patent does not simply teach foaming of acidic monomers. The '600 patent clearly shows that an alkanolamine is needed to prepare a flexible foam (see Examples 1-8 and Comparative Examples 1-3) and in some cases even the presence of an alkanolamine may not provide a useful foam (see Comparative Examples 4-6). Accordingly, the art of preparing foams is not predictable as suggested by the examiner's simple substitution rationale.

The '600 patent, i.e., WO '648, provides neither an incentive nor any apparent reason for a person skilled in the art to make the numerous and radical jumps in reasoning required to arrive at the presently claimed invention. The secondary WO '295 reference fails to overcome the deficiencies of the primary WO '648 reference.

CA '380, i.e., WO '295, merely discloses a physical mixture of acidic and basic hydrogel polymer particles. CA '380 fails to teach or suggest a foam of *any* type. See CA '380, page 1, lines 4-16, teaching a mixture of polymers and "use of these mixtures" in hygiene articles. CA '380 is totally silent with respect to foams, and provides no incentive or apparent reason to form a foam from the disclosed polymer mixture. Furthermore, CA '380 provides no reason to eliminate the acidic polymer from the mixture and form a foam from only the basic polymer. The acidic polymer is essential to both the WO '295 and WO '648 disclosures, and the WO '295 disclosure is silent with respect to preparing foams.

CA '380 teaches that the polymer containing acid groups is water insoluble (page 2, lines 24-25), and that the polymer containing amino-groups is made water-insoluble through crosslinking (page 9, lines 25-27). The reference contains no teaching or suggestion to foam the basic polymers. Rather CA '380 teaches blending particles of an acidic polymer with particles of an already crosslinked basic polymer. In contrast, the present claims are prepared from an aqueous mixture containing basic polymers, and if present, optional a particulate water-absorbing polymer that contains acid groups. Upon forming the foam, the particulate water-absorbing polymer is fixed within the foam network. The particulate water-absorbing acidic polymer cannot be separated from the basic polymer foam. This is completely different from the polymer mixture in CA '380, wherein the acidic and basic polymers in the blend can be readily separated from one another.

The combination of WO '648 and WO '295 therefore fails to render the present claims obvious. Both references disclose an acidic monomer or polymer as an essential element. The combination of references provides no reason or incentive from a reading of the WO '648, which is directed to foams of *acidic* polymers prepared from *monomers*, to form the polymer mixture of WO '295, then foam and crosslink the resulting mixture. Neither reference teaches or suggests eliminating the acid monomer and/or polymer. Accordingly, it is submitted that the rejection of pending claims 1-10 and 12-17 over a combination of WO '648 and WO '295 should be withdrawn.

In supporting the rejection under 35 U.S.C. §103, the examiner states that WO '648 differs from the claims because basic polymers are not particularly required in the reference. The examiner's statements also ignore the entire teaching of WO '648 which *requires* an acidic monomer, and prepares a foam by *polymerizing* acidic monomers. Furthermore, as discussed above, WO '648 (i.e., the '600 patent) demonstrates the unpredictability in the art because *more* is needed to provide a useful foam, e.g., neutralization of the acidic monomer with an alkanolamine amine.

The examiner relies upon WO '295 because of a disclosure of basic polymers in combination with acidic polymers. The reliance on WO '295 to cure the deficiencies of WO '648 is misplaced because this reference is not even directed to foams. In fact, the mixture of WO '295 *cannot* be foamed because both polymers are already crosslinked and no

mechanism remains for the solubilization, the polymerization, or the crosslinking needed to form a foam.

WO '648 also requires an acidic polymer, which is merely an optional ingredient in the present foams. Also WO '295 discloses no more than a physical mixture of discrete particles of an acidic resin and discrete particles of a basic resin. The references fail to teach an optional presence of acidic resin particles fixed in the basic polymer foam.

The examiner relies upon a rationale of simple substitution to support the purported *prima facie* obviousness rejection. However, this application is not a simple case of replacing one claimed element with an equivalent found in a reference. In this case, a person skilled in the art first would have to consider the '600 patent, and rather than polymerize acidic monomers, decide to crosslink basic polymer to provide a foam. In addition, from CA '380, the skilled artisan would have to decide to crosslink the basic polymers and to form a foam even though the reference is not remotely related to foams and the polymer blend disclosed therein cannot form a foam. In addition, the '600 patent does not teach or suggest admixing a second type of water-absorbing polymer particles with the monomers for embedding in the eventual foam.

The references in combination simply fails to provide any incentive, or any apparent reason, for a person skilled in the art to make these jumps in reasoning and arrive at the presently claimed invention.

The examiner is reminded that the Supreme Court recently identified a number of rationales that may be used to support a conclusion of obviousness, consistent with the framework set forth in its decision in *Graham v. John Deere Co.* See *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1739-40 (2007). These and other representative rationales are described at MPEP §2143 (8th Ed., Rev. 6, Sept. 2007). Regardless of the supporting rationale, however, the Patent Office must clearly articulate *facts* and *reasons* why the claimed invention "as a whole" would have been obvious to a hypothetical person having ordinary skill in the art at least as of the claimed invention's effective filing date. The Court specifically stated:

> "Often, it will be necessary...to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an **apparent reason** to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis **should be made explicit**."; and
>
> "Therefore in formulating a rejection under 35 U.S.C. §103 (a) based upon a combination of prior art elements, it remains unnecessary to identify the reason why a person of ordinary skill in the art would have combined the prior art elements in the matter claimed."

See *KSR Int'l*, 127 S.Ct. at 1741 (citing with approval *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.")); *see also* MPEP §2143 ("The key to supporting any rejection under 35 USC §103 is the clear articulation of reason(s) why the claimed invention would have been obvious.").

The recent examination guidelines published in the Federal Register on October 10, 2007 states, citing the *KSR* decision:

> "When considering obviousness of a combination of known elements, the operative question is thus 'whether the improvement is more than the *predictable* use of prior art elements according to their established functions.'" (emphasis added)

With respect to the rationale related to a simple substitution of elements, the guidelines state:

> "B. Simple Substitution of One Known Element for Another To Obtain Predictable Results
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> To reject a claim based on this rationale, Office personnel must resolve the *Graham* factual inquiries. Office personnel must then articulate the following:
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> (1) a finding that the prior art contained a device (method, product, etc.) which differed from the claimed device by the substitution of some components (step, element, etc.) with other components;

(2) a finding that the substituted components and their functions were known in the art;

(3) a finding that one of ordinary skill in the art could have substituted one known element for another, and the results of the substitution would have been predictable; and

(4) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness.

The rationale to support a conclusion that the claim would have been obvious is that the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention. If *any of these findings cannot be made, then this rationale cannot be used* to support a conclusion that the claim would have been obvious to one of ordinary skill in the art." (emphasis added)

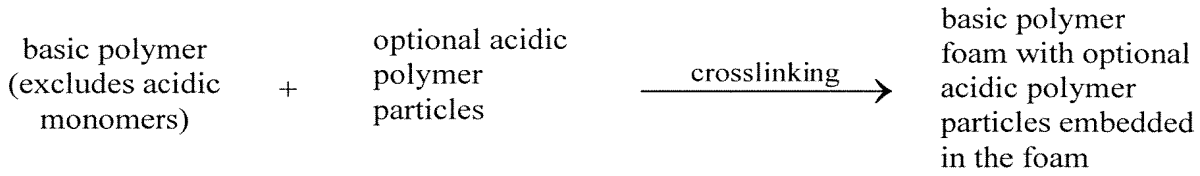
The present rejection cannot be sustained because the combination of references fail to meet finding (1), (2), and (3). The cited art differs from the claimed invention by more than a mere substitution of one component with another component. The present invention is directed to basic polymer foam that excludes the acidic monomer recited as essential in one reference and is different from the physical blend of polymers in the second reference. In addition, each claimed element is *not* in the prior art, for example, a foam prepared form a basic polymer is not in the prior art, nor is the presence of optional *particles* of a particle water-absorbing acidic polymer imbedded in the basic polymer taught or suggested in the art.

Furthermore, the '600 patent shows the unpredictability in the art. The '600 reference shows that the acidic monomers should be neutralized by an alkanolamine to provide a useful form, and in some cases even this did not provide a useful foam CA '380 is silent with respect to foams. How can it be predictable to a person skilled in the art therefore that an entirely different *type* of foam (i.e., basic polymer foam vs. acidic and polymer foams made by a different process) would provide predictable results?

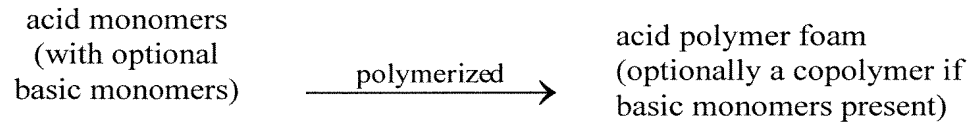
Accordingly, it is submitted that the "simple substitution" rational is not applicable in this application, and, if this rationale arguably is applicable, the rejection still

cannot be sustained because *each* of the four required findings to support the rationale are not met.

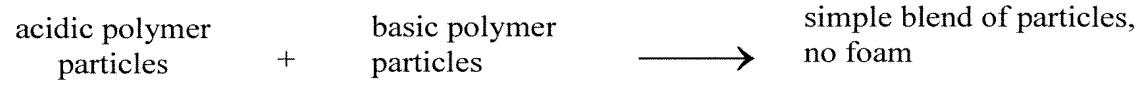
The examiner states that applicants have not identified differences in the claimed product over the cited art. To the contrary, applicants have fully explained the substantial and nonobvious differences between the presently claimed foams and the foams and particle blends of the references. The following summarizes the differences the present invention and the cited art:



WO '648 ('600 patent):



WO '295 (CA '380):



With respect to the examiner's statement that the present claims do not recite crosslinking of the basic polymer through pendant groups, this is the *only* mechanism by which an already formed polymer can be crosslinked. All reactive polymerizable carbon-carbon double bonds of the basic monomer are consumed during polymerization, and crosslinking must occur through pendant hydrogen atoms or amino group. The crosslinked polymer of the '600 patent is formed by crosslinking the reactive carbon-carbon double bonds of the monomers and crosslinking agents.

It is submitted that the claims are in proper form and scope for allowance. An early and favorable action on the merits is respectfully requested.

Should the examiner wish to discuss the foregoing, or any matter of form in an effort to advance this application toward allowance, the examiner is urged to telephone the undersigned at the indicated number.

Dated: January 18, 2008

Respectfully submitted,

By _____

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